Final script from “Adult Immunization Update” satellite broadcast, June 26, 2003.

MMR segment.

Now we’re going to discuss two live vaccines that are recommended for many adults. Let’s start with measles, mumps, and rubella, or MMR. Although these three viral illnesses have not been common in the last few years, adults account for a substantial number of the remaining cases. Since 1990, persons 15 years of age and older have accounted for 30% to 40% of mumps cases annually. In 2000, adults 20 years of age and older accounted for 34% of all measles cases and 87% of all reported rubella cases. Rubella is a particular problem for persons coming from other countries, notably Latin America. Rubella vaccine is not used routinely in much of Latin America, and many other parts of the world.

MMR contains live attenuated viruses. The vaccine is highly effective, and more than 95% of recipients respond to a single dose and develop lifelong immunity to all three viruses. All persons born after 1956 should have documentation of one dose of MMR vaccine given after their first birthday, or some other evidence of immunity, like a serologic test.

Some adults are at much higher risk of exposure to measles than the average adult, and should receive two doses of MMR. Adults at higher risk of exposure include college students, international travelers, and health care workers. College students who live in dormitories are at particularly high risk. International travelers are at increased risk if they visit areas where measles is more prevalent than it is here. College students and international travelers should receive TWO doses of measles- containing vaccine if they do not have other evidence of measles immunity. The second dose is NOT a booster dose. It is insurance, to give recipients another chance to develop immunity if they did not respond to the first dose. Health care workers should also receive two doses of MMR, or have other evidence of immunity, because they are at particularly high risk of measles exposure.

ACIP recommends that MMR be used whenever one or more of the individual components are needed. So here is the adverse reaction profile for combination MMR.

Fever and rash occur in 5% to 15% of recipients. Both of these reactions are usually caused by the measles component, but may be caused by rubella vaccine virus. Joint symptoms, such as pain and swelling, are associated with rubella vaccine. This occurs in up to 25% of susceptible women and less often in men. Thrombocytopenia, or low platelet count, has occasionally been associated with measles vaccine, occurring in less than one in 30,000 doses administered. Parotitis and deafness are rare reactions to mumps vaccine. Finally, encephalopathy is a very rare reaction to measles vaccine, occurring in less than one in one million doses administered.

So, the measles component of the vaccine is responsible for the most common adverse reactions following MMR. All of these adverse reactions occur one to two weeks after vaccination, which, of course, is the incubation period for the vaccine viruses.

Since MMR is a live attenuated vaccine, it has a few more contraindications and precautions to vaccination than the inactivated vaccines we have discussed so far. As with all vaccines, a severe allergic reaction to a to vaccine component or following a prior dose is a contraindication to further doses. Pregnancy is a contraindication to MMR because of the theoretical risk of damage to a developing fetus. The vaccine viruses are NOT transmitted to household contacts, so pregnancy of a household contact is NOT a contraindication to vaccination. Immunosuppression - which we use synonymously with immunodeficiency and immunocompromise - is also a contraindication to MMR.

MMR should NOT be given to people taking large daily doses of oral or parenteral corticosteroids for more than 2 weeks, or to people with cancer, or to people being treated for cancer. MMR should be delayed for at least a month after high dose steroids and at least 3 months after chemotherapy. The viruses in MMR are not communicable, and there is no risk of transmission to a household contact. So MMR is NOT contraindicated for healthy household contacts of immunosuppressed persons.

Measles can be lethal to a person with HIV infection. So MMR continues to be recommended for people with HIV infection, but NOT for people with evidence of SEVERE immunosuppression from HIV. Severe immunosuppression is

defined by low CD4 T lymphocyte counts or by the percentage of total lymphocytes. There is more information about lymphocyte count criteria for severe immunosuppression in the MMR ACIP statement. Prevaccination HIV testing of an otherwise healthy person is NOT recommended.

There are two precautions for MMR. Moderate or severe acute illness is a precaution as it is for all vaccines, and vaccination should be delayed until the acute illness has improved. Recent receipt of a blood product is a precaution because of the potential inactivation of the vaccine viruses due to the antibodies in the blood product. The vaccine and antibody table in the ACIP MMR statement, and in the ACIP General Recommendations on Immunization should be your guide for timing of blood products and MMR.

One of the most common questions we receive about rubella vaccine and MMR is whether a woman of childbearing age should be tested for pregnancy before vaccination. Let's briefly review the recommended procedure for screening and vaccinating a woman of child-bearing age. Neither MMR or rubella vaccine has been shown to injure a fetus. But because fetal injury from rubella vaccine virus is theoretically possible, you should never administer MMR to a woman who is or may be pregnant.

ACIP recommends that you ask if the woman is pregnant or likely to become pregnant in the next 4 weeks. It might be good to ask what form of contraception is being used, because some women who are sexually active and not using contraception may STILL tell you they could not become pregnant. Exclude women who may become pregnant in the next four weeks. For those women who are not excluded by these questions, explain the theoretical risks of vaccination during pregnancy, and the importance of not becoming pregnant during the month following vaccination. Then vaccinate them. ACIP does NOT recommend routine pregnancy testing of women before rubella or MMR vaccination.

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